

Canon imagePROGRAF iPF680

Colour Inkjet Wide-Format Printer



Reliability.....	Excellent
Ease of Network Setup.....	Very Good
Paper Handling.....	Excellent
Ease of Use.....	Very Good
Administrative Utilities.....	Very Good
Print Drivers.....	Excellent
Feedback to Workstations.....	Very Good
Colour Management.....	Good
Colour Print Quality.....	Very Good
Black Print Quality.....	Very Good
Colour/Black Print Productivity.....	Excellent
Feature Set.....	Very Good

BLI RECOMMENDATION

Developed for the production of high-quality technical documents in CAD (Computer-Aided Design), AEC (Architecture, Engineering and Construction) and GIS (Geographical Information Systems) graphics and posters, the highly reliable Canon imagePROGRAF iPF680 gave an outstanding overall performance over the course of BLI's two-month evaluation. Notably, this five-colour, 24-inch wide-format printer proved to be highly productive, logging faster than average speeds in all of the tests—in fact, the fastest speeds recorded by BLI to date for 24-inch models. The unit's print quality is very good overall, while AEC graphics and halftone range were excellent. Canon's new magenta ink makes a noticeable improvement in colour saturation. The unit also offers very good ease of use, especially with its excellent media handling capability—the Media Configuration Tool enables users to add new Canon media types to the system and customize different device settings for each individual media type. In addition, Canon's iPF Direct Print & Share utility, a file storage service provided in conjunction with Google, is a highly useful tool for technical and engineering professionals. The utility enables intuitive scanning to and retrieving files from the cloud, eliminating the need for more time-consuming and restrictive methods of sharing (via FTP and email) and printing, especially for workers in multiple globally distributed sites. Further, Canon's excellent

Test duration: Two months, including a 2,500-square-foot durability test.



GARO print driver offers a wealth of benefits including the Free Layout function and borderless printing, while job monitoring and accounting functions can be conducted from the Status Monitor. Based on its impressive overall performance, BLI highly recommends the Canon imagePROGRAF iPF680 for the technical document print application needs of architectural and engineering professionals.

STRENGTHS

- Flawless reliability performance
- Fastest print speeds tested to date for 24-inch models; faster than average first-page-out times
- Straightforward scan to/retrieve from Google cloud drive via Canon iPF Direct Print & Share eliminates the need for workstations, print drivers and software applications in order to access, print and share files
- Orderly print collection via output stacker
- Sub-ink tank system enables on-the-fly ink tank replacement to reduce downtime
- Excellent ratings for AEC graphics and halftone range
- New magenta ink improves saturation of red output, making posters more vibrant
- Status Monitor features comprehensive accounting, job queue monitoring, file reprinting and maintenance procedures
- Highly valuable Free Layout and Manage Remaining Roll barcode print driver functions; capable of borderless printing
- Bundled PosterArtist Lite software and Print Plug-in for Microsoft Office
- Support for printing from iPad devices

WEAKNESSES

- Lacks a hard drive option; lower than average memory capacity
- iPF Direct Print & Share limited to printing four file types
- Job previewing unavailable from Status Monitor and web page

TEST RESULTS AND OBSERVATIONS

+, – and ○ represent positive, negative and neutral attributes, respectively.



RELIABILITY

EXCELLENT

- + Certified as highly reliable by BLI, the Canon imagePROGRAF iPF680 completed a two-month 2,500-square-foot durability test without experiencing a single jam and with no service calls required.



EASE OF NETWORK SETUP

VERY GOOD

- + Once the printer is connected to the network and assigned an IP address via the control panel, installing the print driver on Windows 7 or 8 workstations is highly automated. The Status Monitor, Media Configuration Tool and Print Plug-in for Microsoft Office are installed together with the Canon iPF680 print driver.
- + The printer's port is automatically created during driver installation.
- Standard connectivity for the Canon imagePROGRAF iPF680 printer includes a Gigabit Ethernet port and a high-speed USB 2.0 port.
- + Compatible operating systems for use with the printer include 32- and 64-bit versions of Windows XP, Server 2003, Server 2008, Server 2012/8, Windows Vista, Windows 7 and 8; Mac OS X 10.6.8 – 10.9X.



PAPER HANDLING

EXCELLENT

- + The Canon imagePROGRAF iPF680 is compatible with a wide range of media. There are 49 types from which to choose on the control panel—numerous coated and technical papers for architectural and engineering print applications; gloss, satin and matte papers of varying weights for photographic print applications; and films, backlit and self-adhesive materials for sign and banner printing. A specific drying time is built into many of the selections, which ensures prints will be dry after completion.
- + Canon's Media Configuration Tool enables users to add new Canon (but not third party) media types to the system, to expand the range of media options for use on the Canon iPF680. Moreover, via the "Show/Hide" tab, users can limit the number of media choices displayed both on the control panel and at the print driver to only those that are most commonly used. Modifications made in the Media Configuration Tool are instantaneously displayed on the panel and in the print driver.
- + The control panel selection "Paper Detail Setting" enables users to customize up to 13 different device settings—including printhead height, cutting mode, cut speed and vacuum strength—for each individual media type.
- The Canon iPF680 supports one media roll in widths from 10 to 24 inches, and cut-sheet media from A4-size up to 24-inch width. Maximum printable length is 1.6 meters, which also depends on the application, operating system and RIP used. The unit accommodates media thicknesses from 0.07 to 0.80 mm.
- + The Canon iPF680 has a Detect Media Mismatch control panel setting (in System Setup), which, when selected, places a job on hold if the required media is not loaded, thereby saving both paper and ink. Additional mismatch settings include: Pause, which pauses the job until the mismatch is addressed; Warning, which warns the user, but prints the job; and None, which ignores the mismatch condition. When a mismatch condition arises with Detect Media Mismatch selected, jobs that are slated for the loaded paper type are printed without delay.

- + The Canon iPF680 has a well-designed output stacker, which can be positioned either as an ordinary catch basket, or as a more practical sheet collection stacker. When positioned as a stacker, plain paper prints are collected face down, neatly and in order. In fact, technicians used the stacker to collect upwards of 30 D-size prints without any issues.
- Common for many devices of this size, the printer accepts media wound on either two- or three-inch cores. Three-inch adaptors, which are labelled L (left) and R (right), can be easily inserted into their respective end caps to accommodate the wider cores.



EASE OF USE

VERY GOOD

- Media rolls are easily loaded from the front of the Canon iPF680, with loading instructions that are conveniently displayed on the control panel. After selecting the Load button on the control panel, the user chooses roll media. The previous media type that was loaded is then displayed, and if it's incorrect, the correct selection must be made on the panel. The roll is positioned on the lightweight spindle and the removable end-cap is inserted firmly on the roll's left edge and locked in place via a small lever. The spindle loaded with the roll is then inserted into the top of the unit and the roll's leading edge is forwarded over the top of the roll and into the media slot. Once the roll is detected by the printer, the rest of the process is automated and takes only a few seconds to complete.
- Loading cut-sheet media is also an easy process. After the control panel's Load button is selected, the user chooses Cut Sheet. The previously used media type is then displayed and if it's not correct, the appropriate selection must be made on the panel. The user is directed on the panel to insert the sheet into a slot on the printer's top cover, while aligning the sheet's right edge against the side of the printer. A helpful adjustable sheet positioning guide on the left side can be moved to hold the sheet in place. Once the sheet is in position, the user is directed to press OK on the panel, after which the remainder of the loading is automated. At the end of the process, the sheet width is automatically detected and the user is prompted to enter the sheet length. If the cut sheet is reported to be skewed, as happened a few times during testing, the process must be repeated. Note that some competitive devices offer automatic skew detection to streamline this process.
- + A common setting on most wide-format printers, the control panel selection "Manage Remaining Roll" will automatically print the media type, width and remaining length in barcode and text on the roll's leading edge, before a roll is removed from the printer. This is especially helpful in busy environments where different media rolls are frequently swapped, enabling users to keep track of different media types more easily. Once a roll is reinstalled, the loading process is automated thanks to the barcoded information, and after it's loaded, the media type and length are displayed on the control panel and reported back to both the web page and Status Monitor.
- + There are nine clearly labelled buttons on the printer's control panel, which is easy to navigate. Although the LCD display, which measures 2" x 1.75", is small, it contains a great deal more information than those of many competitive models. While a job is printing, the five lines of text on the display provide virtually all the information needed by a walk-up user. This includes job status, job name, job dimensions, media type and the remaining print time. There are four icons at the top of the display representing the

Paper, Ink, Job and System menus. Numerous sub-menu selections are available under these headings when the printer is idle. In fact, scrolling to the System menu while a job is printing will provide the user with the status of the maintenance (waste ink) cartridge (in remaining percentage), and the total print area in square feet (or meters) printed up to that point.



Canon iPF680 Control Panel's LCD display

- + Conveniently, common one-touch selections such as media load, feed and cut are located on the printer control panel rather than concealed several layers deep, as is the case for these selections on some competing devices.
- The Navigate button, which can be selected during operation or while idle, will display step-by-step instructions on how to carry out common procedures such as roll and cut-sheet media loading, as well as ink tank and printhead replacement.
- + Users are warned on the control panel and in the utilities when an ink tank has reached a low level, at which time it can be replaced on-the-fly, without interrupting pages that are printing owing to Canon's unique sub-ink tank system. No other wide format printer BLI has tested (apart from other Canon models) offers this time-saving feature. Replacement is an easy process: users simply lift the ink housing cover on the printer's left (C,M,Y) or right (MBK, K) sides, then unlatch and remove the ink tank that is indicated to be at a low level and replace it. Each of the five colour ink tanks is slotted differently to prevent users from inserting a tank in the wrong position.
- The Canon iPF680 employs a maintenance (waste ink) cartridge that collects unused ink. The tank, which is located under a cover at the bottom front of the printer, is user-replaceable and its replacement is easily initiated from the control panel.
- + Printhead replacement is also easy, and initiated in the Maintenance section at the control panel. Once the procedure is initiated, the unit goes through an "Absorbing ink" process, after which the printhead carriage moves to the centre of the printer and the user is instructed to open the centre cover. After unlatching the used printhead from its housing and removing it, the replacement head easily fits in place and the housing is secured via the latch. The unit then goes through a "Replenishing with ink" process after which a nozzle check is automatically performed, followed by an alignment procedure intended to ensure consistent image quality. The entire process takes about 20 minutes.
- Occasionally during testing, the printer randomly conducted an automatic nozzle check, whereupon the message "Nozzle check/Keep cover closed" was displayed on the con-

trol panel. The manual states that nozzles are periodically checked to ensure they are clear. There are two control panel nozzle check frequency settings—Standard, which is the default, and One page, which results in a nozzle check after every single page.

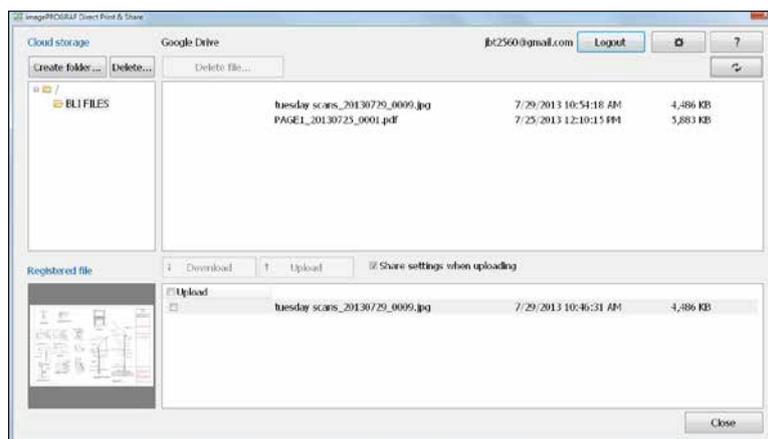
- + Walk-up users can delete a job from the control panel by pressing the Stop button, after which they are prompted to confirm the deletion by selecting “Yes,” which reduces the possibility of accidental job deletion.
- + A common selection in most wide format print drivers, Canon’s “Open preview when print job starts” option enables the viewing of files not yet printed, thereby allowing users to verify proper sizing and content before printing, which may prevent the waste of ink, media and time. When a preview is open, each page of a multi-page file can be previewed. Unique preview features include length and width ruler guides; the ability to enlarge the image; the ability to flip or mirror the image; the ability to centre the image on the page and/or remove empty spaces at the top and bottom of the page before the file is printed.



ADMINISTRATIVE UTILITIES

VERY GOOD

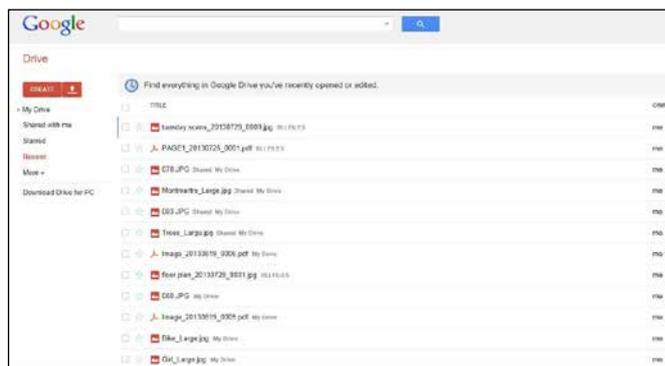
- + Canon’s imagePROGRAF Direct Print & Share utility comes as standard. To begin using the program, the user creates a Google Drive account where files will be stored. Clicking on the cloud icon launches the Google Drive window, as pictured below. To upload a scanned file to Google Drive or download a file for printing from it, a login name and password must be entered, after which the 5-GB cloud drive is fully accessible.



iPF Direct Print & Share Cloud Storage

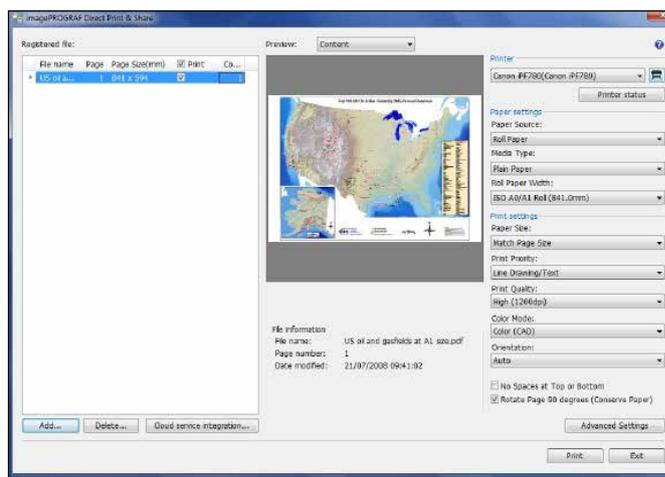
- + Simultaneously with storing files in the cloud, users can share them with anyone by selecting the “Share settings when uploading” box, which is checked by default. After entering the email addresses of all the intended recipients of the file(s), the recipients receive a notification email with the file(s) attached once the upload has completed. Simply clicking on the file opens it in Google Drive, where it can be viewed and/or downloaded. This process was conducted many times throughout BLI’s evaluation without any issues being recorded.

- + Although it is not possible to print file types other than PDF, JPEG, HP-GL/2 and TIFF from the cloud storage location, there are virtually no restrictions on the size or type of file being uploaded.
- Some competitive utilities enable direct printing of more file types than the four (PDF, JPEG, HP-GL/2 and TIFF) that the imagePROGRAF Direct Print & Share utility is capable of printing.



List of Files Uploaded to Google Drive

- + Accessing files on Google Drive for printing on the Canon iPF680 is equally straightforward, requiring the user to launch the iPF Direct Print & Share program and select the Cloud service integration tab. In doing so, a new window opens, which requires entering the user's login ID and password. Any file (PDF, JPEG, HP-GL/2 or TIFF) that resides on Google Drive can then be selected for printing by highlighting it and then selecting download, thus bypassing the need for application software to open each file prior to printing. Highlighting each file in the registered file list provides a thumbnail image in the centre of the window and from the right column virtually all print settings can be modified before printing.

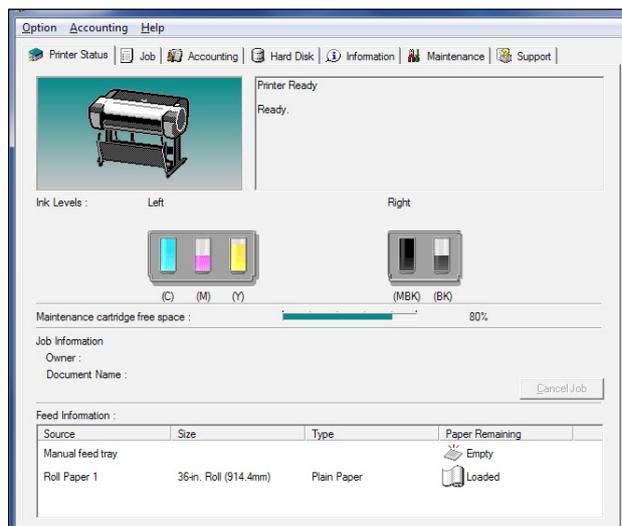


iPF Direct Print & Share Preview Screen

- A minor inconvenience is that, after downloading files from the cloud to Direct Print & Share, the user must first close the cloud service integration screen before being able to print the file that was downloaded, and the user is not directed to close the first screen.

Immediately after the cloud service integration screen is closed, all downloaded files appear in the “registered files” screen of iPF Direct Print & Share.

- + The Canon iPF680 now supports printing from iPads—a capability also offered by some competitive devices.
- + A valuable component of all Canon wide format printers, the Status Monitor utility auto-launches by default when a file is sent to the printer either via the print driver or via Direct Print & Share. From the utility, users can view the progress of print jobs and monitor paper and ink supplies. The utility can also be launched via the Windows Programs menu or directly from the print driver at any workstation. Page number and time remaining information is provided while a job is printing, which is especially helpful when monitoring the printer.



Status Monitor’s Printer Status tab monitors consumable levels and the utility also accounts for device usage.

- + The Status Monitor’s Job tab offers users the ability to view the status of jobs in the queue, as well as to pause, preempt or cancel jobs directly from the workstation rather than at the control panel, where these operations can also be conducted.
- The ink remaining information provided in the Status Monitor and the device’s web page is presented only in 20 percent increments. An “ink tank supply low” message will be displayed when a 20 percent volume remains. Some competitive models provide remaining ink information in more granular 1-ml. increments.
- + Another standard component for Canon imagePROGRAF users, the user-friendly Accounting Manager provides comprehensive accounting management for all print jobs. Via the Status Monitor, users simply enter the actual costs for individual inks, each media type, as well as other costs such as lamination or offline finishing requirements, and the cost per job is automatically calculated and displayed. The media type, square footage, ink consumed and total print time are also listed for each job. By double-clicking on an individual job name, more detailed cost and consumption information is provided. Users can even obtain a value for overall ink and paper consumption, as well as total job cost, by highlighting every job in the list. Job cost data can be saved in .CSV format and opened in Microsoft Excel. Some competing devices either do not offer accounting capabilities, or offer accounting only via a separate downloadable utility.

Job Cost(\$)	Document Name	Printing Results	Media Type	Paper Consumed(m ²)	Ink Consumed(ml)	Owner	Print Job Start Time	Print Time
0.1279	NEW BLI IMAGE Q...	OK	Canon Glossy Photo Pa...	0.1279	0.261	UKTEST10	2014-05-09 08:10:27	00:01:29
0.1279	NEW BLI IMAGE Q...	OK	Canon Glossy Photo Pa...	0.1279	0.203	UKTEST10	2014-05-09 08:08:10	00:01:29
0.1279	NEW BLI IMAGE Q...	OK	Canon Glossy Photo Pa...	0.1279	0.220	UKTEST10	2014-05-09 08:03:59	00:01:01
0.5430	Windows_Server_2...	OK	Plain Paper	0.5430	3.024	UKTEST10	2014-05-15 15:05:24	00:01:39
0.5430	Remote Desktop-5...	OK	Plain Paper	0.5430	3.128	UKTEST10	2014-05-15 15:02:58	00:01:36
0.5574	SmartWorks MPP	OK	Plain Paper	0.5574	0.279	UKTEST10	2014-05-14 13:16:52	00:00:58
0.5574	SmartWorks MPP	OK	Plain Paper	0.5574	0.346	UKTEST10	2014-05-14 13:14:46	00:01:09
0.5574	SmartWorks MPP	OK	Plain Paper	0.5574	0.282	UKTEST10	2014-05-14 13:11:17	00:01:00
0.5574	SmartWorks MPP	OK	Plain Paper	0.5574	0.178	UKTEST10	2014-05-14 13:09:10	00:00:54
0.5430	ARF305A.tmp	OK	Plain Paper	0.5430	1.394	UKTEST10	2014-05-13 15:19:15	00:01:24
0.2714	NEW BLI IMAGE Q...	OK	Plain Paper	0.2714	0.170	UKTEST10	2014-05-13 14:24:50	00:00:47
0.2714	NEW BLI IMAGE Q...	OK	Plain Paper	0.2714	0.166	UKTEST10	2014-05-13 13:55:58	00:00:44
0.1919	NEW BLI IMAGE Q...	OK	Plain Paper	0.1919	0.194	UKTEST10	2014-05-13 13:43:49	00:00:59
0.1919	NEW BLI IMAGE Q...	OK	Plain Paper	0.1919	0.152	UKTEST10	2014-05-13 13:43:38	00:00:25
0.1919	NEW BLI IMAGE Q...	OK	Plain Paper	0.1919	0.165	UKTEST10	2014-05-13 13:43:18	00:00:29
0.3909	ARF305A.tmp	OK	Plain Paper	0.3909	0.958	UKTEST10	2014-05-13 13:36:46	00:01:53
0.7089	ARF305A.tmp	OK	Plain Paper	0.7089	0.906	UKTEST10	2014-05-13 13:35:21	00:01:42
0.2714	Test Page	OK	Plain Paper	0.2714	0.111	UKTEST10	2014-05-02 09:18:37	00:00:58
1.0871	1250.pdf	OK	Plain Paper	1.0871	1.598	UKTEST10	2014-05-02 06:48:54	00:02:38
1.0871	96266.pdf	OK	Plain Paper	1.0871	2.122	UKTEST10	2014-05-02 06:47:16	00:02:04

Document Name: Total Ink Consumed: 15.778 [ml]
Total Job Cost: Total Paper Consumed: 9.2442 [m²]

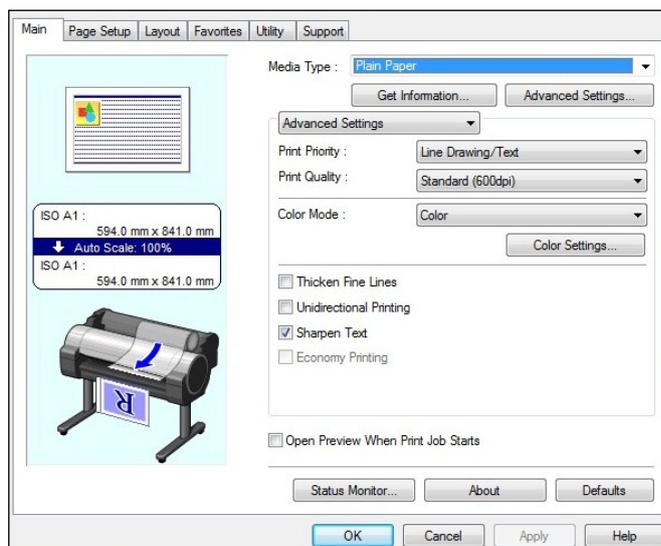
Accounting Manager provides detailed and comprehensive accounting for all print jobs.

- + The Information tab in the Status Monitor offers useful status, system and log information that can be updated, printed and/or saved from within the various selections in the tab.
- The Remote User Interface, or web page, offers only limited functionality compared with both the Canon Status Monitor and competitive web servers. The Print Log offers a static list of printed jobs. However, jobs can be reprinted from the Mailboxes listed in the Stored Jobs tab. For job reprints, users can select a quantity but cannot make modifications to media selection or print quality settings.
- + The web page's device manager enables an administrator to configure various security settings such as an administrator login password; enable IPP and FTP authentication settings; establish IPv4, IPv6 and MAC address ranges; configure/change network settings; and check device status.



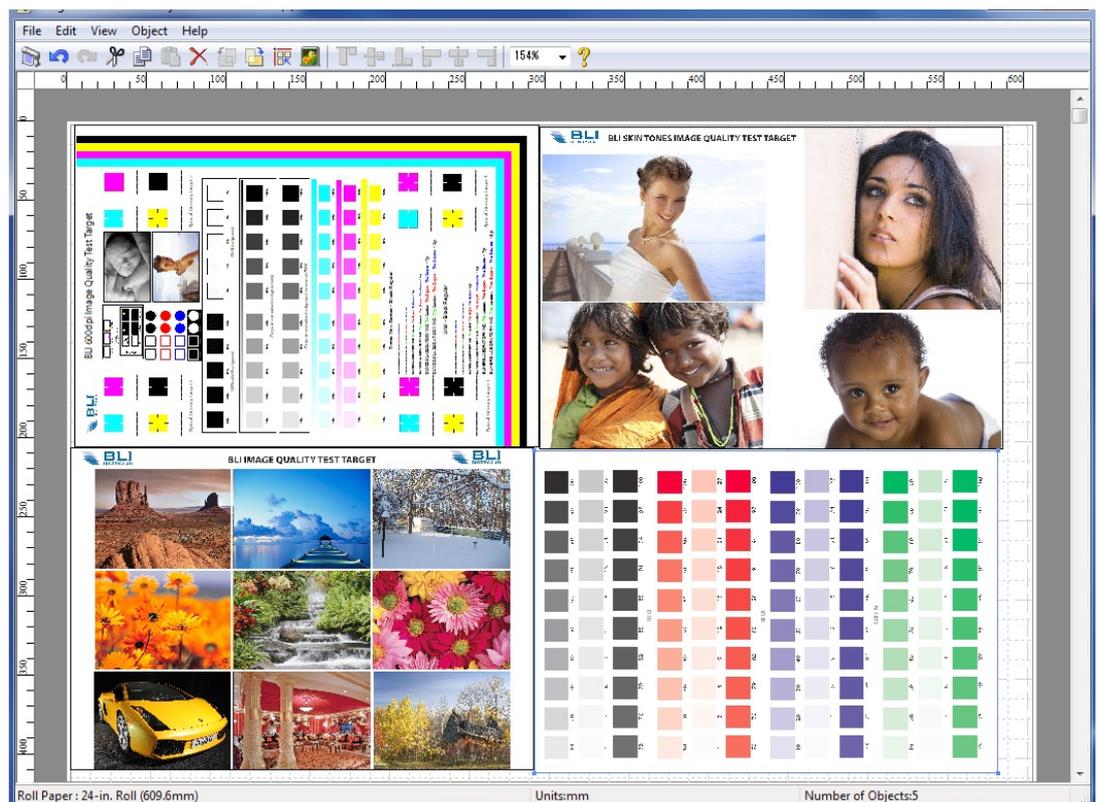
PRINT DRIVERS

EXCELLENT



Canon iPF680 Print Driver Main Tab includes the most commonly used settings such as media type, print quality and colour mode.

- + The unit ships with Canon’s proprietary GARO (Graphic Arts with Raster Operations) print driver, which is graphical and includes six tabs that are easy to navigate. The most commonly used settings, such as media type, print quality and colour mode are selectable from the Main tab.
- + On the Main tab are seven “Print Target” selections that provide for quick and easy “one touch” selection of optimum settings for a print job based on the selected print target. The choices include Poster, CAD (Colour Line Drawing), CAD (Monochrome Line Drawing), Perspective (GIS), Photo (Colour), Office Document and Faithful Colour Reproduction. The number of available Print Target selections varies depending on the media type selected.
- + Canon’s easy to use Free Layout function, an image nesting feature available for all Canon wide-format printers, enables documents and/or images—even those with different file formats—to be merged on a single page and printed together across the loaded media width. After enabling the Free Layout function, a thumbnail image of each submitted file appears in the newly opened Free Layout window where the images can easily be repositioned or resized and then printed on one page. Some competitive devices of this size do not offer an image nesting feature.



Free Layout image nesting function can be used to save on paper.

- + Users can choose to print the date, time, user name and/or page number on their prints via selections in the Layout tab’s page options section, a feature available in only a few competitive print drivers. Customized paper sizes can also be added to the drop-down menu from the Page Setup tab.

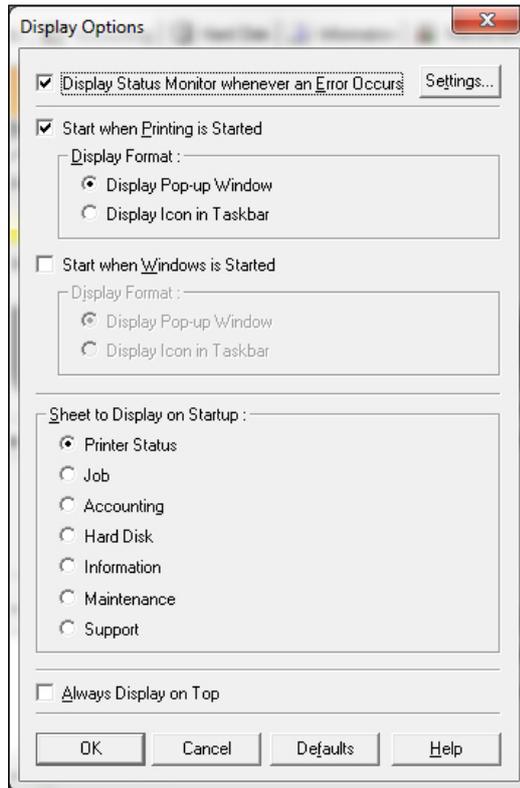
- + In the driver's Page Setup tab, Canon offers a Borderless Printing selection, which, when selected, will print images directly to the edge of the media.
- + Up to 50 different user-configurable and user-named Favourites can be created in the driver's Favourites tab, a feature common to many wide-format devices. Each Favourite consists of a variety of user-specified settings, such as colour or greyscale, paper type/orientation/size and print quality, enabling users to select a Favourite with one click rather than making individual print setting choices for each job.
- + Canon's Print Plug-in for Office enables large format printing of Microsoft Word, Excel and PowerPoint documents.
- + Maintenance procedures including nozzle checks, printhead alignment, printhead cleaning and paper feed adjustment can be performed via the print driver or Status Monitor, as well as at the control panel. This is preferable to some devices that enable initiation of these functions only from the control panel.
- + A simple print driver feature used repeatedly during BLI's evaluation was performed via the Get Information shortcut tab. After numerous media exchanges on the printer, instead of users having to search for the exact media type on the print driver, clicking on the tab automatically applies the newly-loaded media type and displays the media width.
- + User-selectable paper sizes in the driver include ISO, ANSI, Arch and Photo, among several others. Conveniently, when scrolling above each selection, the specific page dimensions are listed in both English and metric units. These can also be hidden if certain size standards are not used. Additional media settings for modifying drying time, margins, cut speed and mirror printing can be applied individually for each print job via the print driver's Advanced Settings tab.



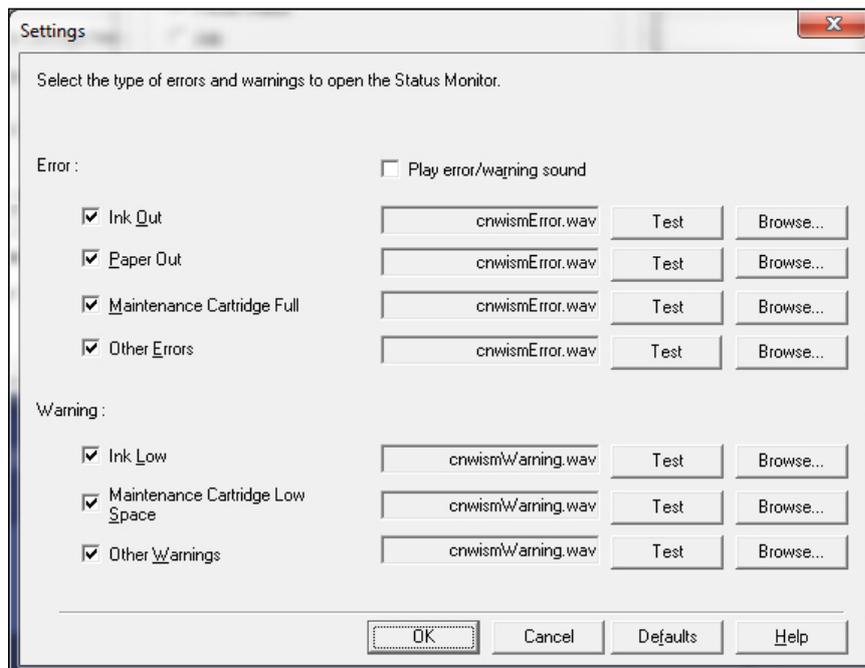
FEEDBACK TO WORKSTATIONS

VERY GOOD

- + The Status Monitor can be configured to display either as a pop-up window or a taskbar icon. It can be configured to launch automatically either when printing starts and/or when Windows is started. Errors and/or warnings such as ink out, paper out or ink low, can be set to display. An audible alert can also be set for each of these conditions.
- Email server settings can be configured in the Status Monitor, which enables warnings and/or error notifications to be sent to up to two email addresses. Some competitive systems allow notifications to be sent to more than two addresses, as well as SMS alerts to mobile devices.
- Warning and/or error messages are provided in the web page as well as the Status Monitor. Some competing devices also provide this information in the print driver.



Status Monitor – Display Options



Display Option Settings



COLOUR MANAGEMENT

GOOD

- As is typical for most wide-format printers, the imagePROGRAF iPF680 offers numerous colour modification settings in the print driver. Sliders are available to make adjustments to C, M, Y or R, G, B, as well as to brightness, contrast, saturation and greyscale tone. Adjustments can be applied to images, graphics and/or text. A helpful graphical display showing the effect of the selected changes is provided as a thumbnail in the print driver.
- From the driver's Colour Settings tab, numerous predefined ICC profiles and rendering intents are available, which can be applied to every file being printed for accurate colour matching. Three matching modes – Driver Matching Mode, ICC Matching Mode and Host ICM Mode are available. These selections vary by the media type set in the driver.



COLOUR PRINT QUALITY

VERY GOOD

- + On colour architectural (AEC graphics) pages, the Canon iPF680 exhibited excellent overall print quality. Colours were produced very accurately. Closely spaced fine lines were distinct and line thickness was consistent, while circles and diagonal lines displayed no evidence of stair-stepping.
- + Using the print driver's default GIS setting, high ink coverage maps were produced accurately and with fine details on plain paper, producing a highly realistic three-dimensional rendering of topographical features.
- + The unit produced above average optical densities in all colours on plain paper using the default driver settings compared with competitive four- to six-ink devices BLI has tested.
- + The Canon iPF680 displayed very good halftone fills, with smooth greyscale and an excellent halftone range with distinct transitions between all levels.
- When printing on plain paper, the Canon iPF680 delivered a colour gamut with a competitive CIE volume of 216,452 in Standard mode.



BLACK PRINT QUALITY

VERY GOOD

- + Text produced by the unit was rated very good by BLI analysts. It was dark and fully formed, with above average sharpness of characters and smoothness of curves and serifs. Ink overspray was not visible, while text printed in 3-point size was clearly readable with no breakup.
- + Line art was also rated very good, as consistency of line thickness, production of diagonal lines and formation of circles were all above average, with no sign of stair-stepping. Separation of closely spaced fine lines was also above average.

- + When using the driver's monochrome setting, halftone range was excellent, with greyscale visible from 10 (the minimum level) to 100 percent, and distinct separations between all levels. Halftone fills appeared neutral grey, even though under magnification it was observed that all inks were used to produce the grey areas.
- Solids were rated very good, exhibiting above average darkness and consistency of coverage when printing in full colour (composite black); in greyscale mode the optical density was slightly lower than average.



COLOUR/BLACK PRINT PRODUCTIVITY

EXCELLENT

- + BLI's 19-page job stream completed printing in 17 minutes and 12 seconds, which is much faster than average for devices in the competitive group.
- + Similarly, at the driver's default Standard quality setting, BLI's 12-page productivity file completed printing in colour in 10 minutes and 25 seconds, which is also faster than average.
- + In addition, the Canon iPF680's first-page-out times from ready and weekend sleep modes were faster than average for devices in the competitive group.
- + When printing BLI's 12-page productivity file in monochrome mode, the job completed printing in 10 minutes and 40 seconds, which is also faster than average.
- + Further boosting this unit's excellent productivity is that it continues to print (drawing ink from its sub tank) when ink needs replacing, so there is no operator downtime, plus no ink or paper is wasted, as is the case with competitive models.



FEATURE SET

VERY GOOD

- The 256-GB RAM capacity of this unit is below average compared with some competitive models in this class.
- Moreover, no hard drive is available for this model.
- + Mobile printing from iPads is supported by an app now available from Canon.
- + As noted above, Canon's unique sub-ink tank system enables on-the-fly ink tank replacement with none of the operational downtime experienced with rival models when replacing ink.
- + The unit's flat stacker/basket is an improvement over some predecessor devices and competitive devices that only have a basket for print collection. This feature enabled the orderly collection of up to 30 Arch D-size prints.

- The unit comes with 90-ml starter ink cartridges (130 ml for matte black), while 300 – or 130-ml replacement cartridges are available for all colours. Some competing devices of this size offer cartridges in volumes up to 700 ml, which would require less frequent replacement.
- + Canon’s PosterArtist Lite software is included as standard with the Canon iPF680; it is used to create posters for any number of applications such as office presentations, trade show graphics and retail signage. According to Canon, the latest (v2.5) version of PosterArtist Lite is fully integrated with iPF Direct Print & Share to enable users to create and save posters to the cloud.
- The full version of Canon PosterArtist, which is available as an option, offers advanced features such as Auto Design, Variable Data, in-application editing features, as well as additional templates, royalty-free photos and clip art.
- + The company also includes a Print Plug-in for Microsoft Office, which makes possible direct printing from Microsoft Word, Excel and PowerPoint applications, for displaying enlargements of these documents for office presentations.
- The latest version (v2.0) of iPF Direct Print & Share supports “Shortcut Print” functionality which defines several print settings via a desktop icon. Files are automatically printed with the pre-defined settings with a simple drag-and-drop operation on the icon. Multiple desktop icons can be created for different print settings.
- User-replaceable items include the printhead, maintenance (waste ink) cartridge and a rotary media cutter.

SUPPORTING TEST DATA

Test Environment: Testing was conducted in BLI's European test lab, in an atmospherically controlled environment monitored by a 24/7 ExTech RH520 Temperature/RH chart recorder, ensuring that typical office conditions were maintained. All paper used in testing was allowed to acclimatize inside the facility for a minimum of 12 hours before being used. All products are powered by dedicated circuits that are protected by ESP (Electronic Systems Protection, Inc.) surge protectors to prevent transient power and communication disturbances from affecting equipment under test.

Test Equipment: BLI's dedicated test network in Europe, consisting of Windows 2008 servers, Windows 7 workstations, 10/100/1000BaseTX network switches and CAT5e/6 cabling.

Test Duration: Products are tested for two months, a portion of which consists of a durability test. For 42-inch printers and larger, a volume of 10,000 square feet is run. For 36-inch printers, a volume of 7,500 square feet is run and for 24-inch printers, a volume of 2,500 square feet is run. All print volumes are evenly divided on a daily basis over the course of the test.

Tested Configuration: Canon imagePROGRAF iPF680 base model.

Test Procedures: The test methods and procedures employed by BLI in its lab testing include BLI's proprietary procedures and industry-standard test procedures. In addition to a number of proprietary test documents, BLI uses industry-standard files including an IT8 test file and an ASTM monochrome test document for evaluating colour and black image quality, respectively. In addition to a visual observation, colour print quality and gamut size is evaluated using a profile software tool from Colour Confidence that was read using an EFI ES-1000 colour spectrophotometer and analysed using Chromix ColorThink Pro 3.0 software. Density of black and colour output was measured using an X-Rite 508 densitometer.

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RELIABILITY

Beginning of Test (Meter Count)	0 square feet
End of Test (Meter Count)	2,500 square feet
Total jams	0
Total Service Calls	0



PRINT DRIVERS

Canon imagePROGRAF iPF680 Print Driver Features

Print Quality Settings	Up to 5 depending on media type
Economy Mode	Yes
High Quality Mode	Yes
Watermark	Yes
Page Stamp	No
Comment	No
Mirror Image	Yes
N-up Printing	Yes*
Media Status	Yes*
Ink Status	Yes*
Predefined Print Settings/Shortcuts	Yes
Autorotate	Yes
Image Rotation	180°
(Show) Print Preview	Yes
Borderless Printing	Yes
Fit to Roll Width	Yes
Acquire (Get) Info	Yes
Print Page Number	Yes
Print Job Settings	No
Link to Status Monitor Page From Driver	Yes
Thicken Fine Lines	Yes
Unidirectional Printing	Yes
Sharpen Text	Yes
CMYK Balance Adjustment	C, M, Y only
Lightness Adjustment	Yes
Contrast Adjustment	Yes
Saturation Adjustment	Yes
Advanced Colour Management Options	3 Matching Modes
Disable Cutter	Yes
Remove Top/Bottom Blank Areas	Yes
Crop Marks	No
Secure Printing/Account ID	No
Reduction/Enlargement	5% to 600%
Legacy Printer Emulation	Yes
PANTONE Colour Emulation	No
Set Monitoring Preferences	No
Conduct Nozzle Check	Yes*
Conduct Head Cleaning	Yes*
Conduct Head Alignment	Yes*
Conduct Firmware Upgrade	No

*Via Link to Status Monitor



PRINT QUALITY

Colour Print Quality – Plain Paper

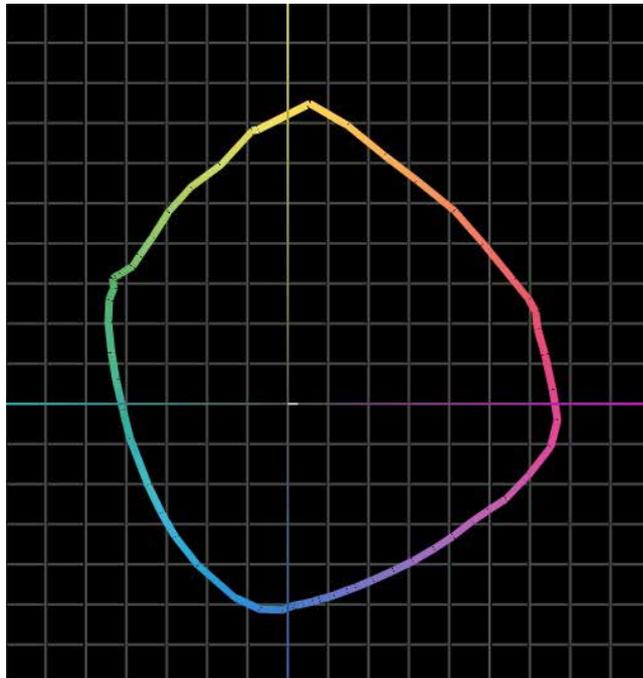
Colour, Graphics, Standard (600 dpi) driver setting

Colour Print Quality	Rating
Photographic Images	Very Good
AEC Graphics	Excellent
Business Graphics	Very Good

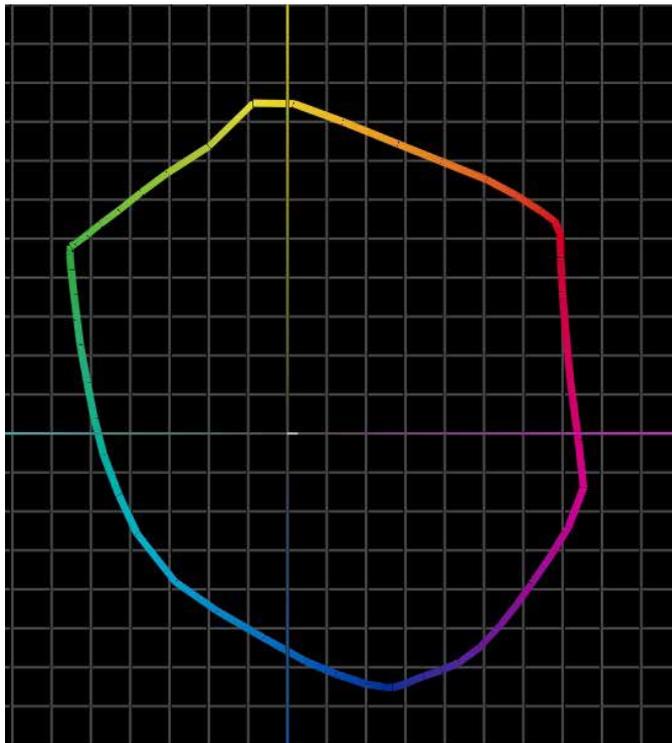
Colour Density – Plain Paper

Driver Setting:	Fast (300 dpi)		Standard (600 dpi)		High (1200 dpi)	
	50%	100%	50%	100%	50%	100%
Dot Fill:	50%	100%	50%	100%	50%	100%
Cyan	0.49	1.05	0.53	1.11	0.50	1.13
Magenta	0.46	0.98	0.50	1.04	0.50	1.10
Yellow	0.38	0.77	0.42	0.83	0.40	0.86
Black	0.65	1.35	0.72	1.44	0.70	1.46

Note: Colour density readings were measured on solid colour patches and 50% dot fill on plain paper at the fast, standard and high quality driver settings with the driver set to "Image".



Canon imagePROGRAF iPF680 Colour Gamut on Plain Paper in Standard quality mode, with a CIE volume of 216,452.



Canon imagePROGRAF iPF680 Colour Gamut on Glossy Photo Paper in High quality mode, with an impressive CIE volume of 642,169.

Black Print Quality – Plain Paper Monochrome, Line/Text, Standard (600 dpi) driver setting

Black Print Quality	Rating
Text	Very Good
Line Art	Very Good
Halftone Pattern	Very Good
Halftone Range	Excellent
Solids	Very Good
Architectural Drawings	Very Good

Black Density – Plain Paper (Monochrome, Line/Text driver setting)

Driver Setting:	Fast (300 dpi)	Standard (600 dpi)	High (1200 dpi)
Density:	1.35 to 1.42	1.42 to 1.44	1.44 to 1.47

Print density for four- to six-colour wide-format inkjet printers/s tested to date at default setting: 1.42 to 1.54

Halftone range:

Halftone output was visible across the full range from the 10% to the 100% dot-fill levels, with distinct separation between all levels.



PRODUCTIVITY

Technical Print Productivity

Job Stream

Print Driver Quality Setting	Print Time (Min:Sec)	Calculated Pages Per Hour
Standard (600 dpi)	17:12	54.29

BLI's job stream includes PDF, TIFF and DWF files, totalling 19 pages. This test indicates the type of traffic a typical wide-format device might experience in a real-world, multi-user environment. The files are submitted in a specific order to the printer using the Canon driver while it is paused. The stopwatch begins once all the jobs are queued and the print driver is released from the pause mode; timing ends after the last page is cut. The printer was loaded with 36-inch plain paper and the driver was set to landscape, normal quality and printer managed colours.

Colour Print Productivity

Print Driver Quality Setting	Print Time (Min:Sec)	Calculated Pages Per Hour
Fast (300 dpi)	7:29	96.10
Standard (600 dpi)	10:25	69.08
High (1200 dpi)	19:21	37.21

A 12-page Arch D-size DWF test file was submitted to the printer via the Canon print driver while it was paused. The driver was set to plain paper, line drawing/text, colour and landscape orientation. The time indicated is the time it took to print and deliver all pages of the test document to the stacking tray, after the driver was released from pause mode.

Black Print Productivity

Print Driver Quality Setting	Print Time (Min:Sec)	Calculated Pages Per Hour
Fast (300 dpi)	7:17	98.76
Standard (600 dpi)	10:40	53.30
High (1200 dpi)	19:18	37.30

A 12-page Arch D-size DWF test file was submitted to the printer via the Canon print driver while it was paused. The driver was set to plain paper, line drawing/text, monochrome and landscape orientation. The time indicated is the time it took to print and deliver all pages of the test document to the stacking tray, after the driver was released from pause mode.

First-Page-Out Times

	Time (Min:Sec)
From ready mode	0:58
From weekend sleep mode	1:26

An Arch D-size PDF test file was printed on plain paper using the Canon iPF680 print driver set to plain paper, line drawing/text, standard quality, colour and landscape orientation. The time indicated is the time it took to RIP, image and deliver the page to the stacker tray.

CERTIFICATE OF RELIABILITY

AWARDED TO

CANON, INC.

for the performance of the

Canon imagePROGRAF iPF680

in BLI's in-house durability test



ANTHONY F. POLIFRONE
MANAGING DIRECTOR



NOVEMBER 2014

DATE

This is to certify that when subjected to a 2,500-foot Buyers Lab durability test,
the Canon imagePROGRAF iPF680 proved to be a highly reliable product.

BUYERS LABORATORY LLC

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